AXIS M4215-V Dome Camera

Varifocal 2 MP dome with deep learning

Featuring Lightfinder and WDR, this compact and discreet dome delivers great image quality in challenging light conditions. A deep learning processing unit (DLPU) lets you take advantage of advanced analytics based on deep learning on the edge. Designed to blend into any environment, it can be repainted and offers a range of accessories for discreet monitoring. Plus, it features an HDMI port and the flexibility to add audio and I/O connectivity using AXIS T61 Series. Furthermore, Axis Edge Vault provides a hardware-based cybersecurity platform that safeguards the device.

- > Great image quality in 2 MP
- > Varifocal lens with remote zoom and focus
- > Lightfinder and WDR
- > Analytics with deep learning
- > HDMI output for public viewing monitors

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Camera

Image sensor	1/2.8" progressive scan RGB CMOS
Lens	Varifocal, 3.5–6.6 mm, F1.7 - 2.6 Horizontal field of view: 93°–47° Vertical field of view: 50°–26° Minimum focus distance: 1.5 m (59 in)
Day and night	Automatic IR-cut filter
Minimum illumination	With Lightfinder: **Color:** 0.14 lux at 50 IRE F1.7 **B/W:** 0.03 lux at 50 IRE F1.7, 0 lux when IR illumination is on
Shutter speed	1/25000 s to 1/5 s
Camera angle adjustment	Pan ±180°, tilt -40 to +65°, rotation ±105° Can be directed in any direction and see the wall/ceiling

System on chip (SoC)

Model	CV25
Memory	1024 MB RAM, 512 MB Flash
Compute capabilities	Deep learning processing unit (DLPU)

Video

Video compression	H.264 (MPEG-4 Part 10/AVC) Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG
Resolution	1920x1080 to 320x240
Frame rate	Up to 25/30 fps with power line frequency 50/60 Hz in H.264 and H.265[a]
Video streaming	Multiple, individually configurable streams[b] Axis Zipstream technology in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265
Multi-view streaming	2 individually cropped out view areas
HDMI output	HDMI 1080p (16:9) @25/30 fps (50/60 Hz) HDMI 720p (16:9) @50/60 fps (50/60 Hz)
Noise reduction	Spatial filter (2D noise reduction) Temporal filter (3D noise reduction)
Image settings	Compression, color, brightness, sharpness, contrast, white balance, exposure control, motion-adaptive exposure, WDR: up to 110 dB depending on scene, text and image overlay, mirroring of images, privacy mask Rotation: 0°, 90°, 180°, 270°, including Corridor Format
Pan/Tilt/Zoom	Digital PTZ

Audio

Audio input/output	Audio features through portcast technology: two-way audio connectivity, voice enhancer

Network

Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS, TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SSH, LLDP, CDP, MQTT v3.1.1, Link-Local address (ZeroConf)

System integration

Application Programming Interface	Open API for software integration, including VAPIX® and AXIS Camera Application Platform; specifications at *axis.com* One-click cloud connection ONVIF® Profile G, M, S and T, specification at *onvif.org*
Video management systems	Compatible with AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available at *axis.com/vms*
Onscreen controls	Privacy masks Media clip
Event conditions	Application Device status: above operating temperature, above or below operating temperature, below operating temperature, within operating temperature, IP address removed, new IP address, network lost, system ready, live stream active Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: manual trigger, virtual input MQTT: subscribe Scheduled and recurring: schedule Video: average bitrate degradation, day-night mode, tampering
Event actions	Day-night mode MQTT: publish Notification: HTTP, HTTPS, TCP and email Overlay text Pre- and post-alarm video or image buffering for recording or upload Recordings: SD card and network share SNMP traps: send, send while the rule is active Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email WDR mode
Built-in installation aids	Pixel counter, remote zoom and focus, level grid

Analytics

AXIS Object Analytics	**Object classes**: humans, vehicles (types: cars, buses, trucks, bikes) **Features**: line crossing, object in area, occupancy in area[BETA], time in area[BETA] Up to 10 scenarios Metadata visualized with color-coded bounding boxes Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
Metadata	Confidence, position **Object data**: Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates **Event data**: Producer reference, scenarios, trigger conditions
Applications	**Included** AXIS Object Analytics, AXIS Video Motion Detection, AXIS Face Detector, AXIS Live Privacy Shield, active tampering alarm **Supported** AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Approvals

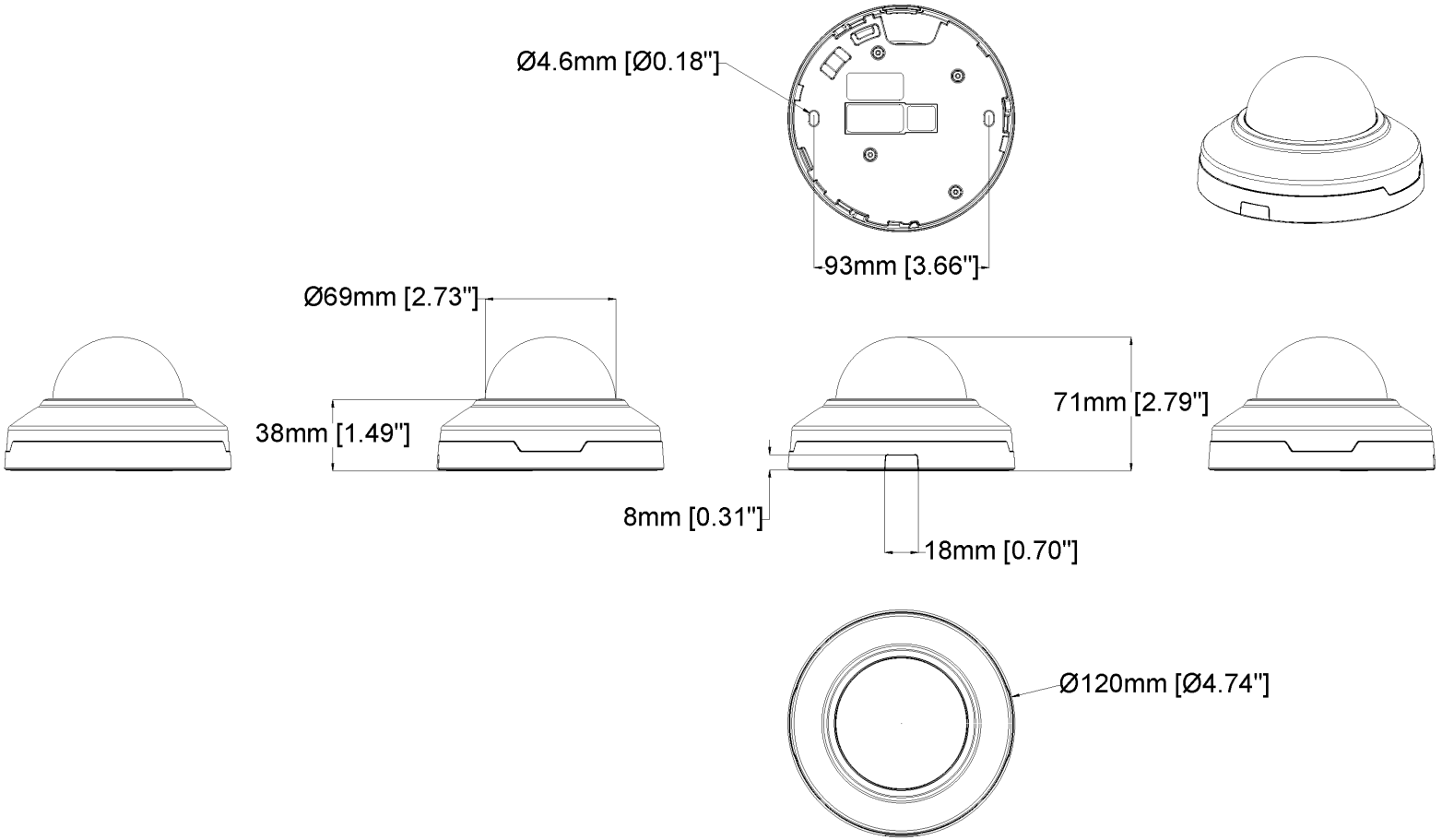
Product markings	CSA, UL/cUL, BIS, UKCA, CE, KC, EAC, VCCI, RCM
EMC	CISPR 35, CISPR 32 Class A, EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2 **USA:** FCC Part 15 Subpart B Class A **Canada:** ICES-3(A)/NMB-3(A) **Korea:** KS C 9835, KS C 9832 Class A **Australia/New Zealand:** RCM AS/NZS CISPR 32 Class A **Japan:** VCCI Class A
Safety	IEC/EN/UL 62368-1, CAN/CSA C22.2 No. 62368-1, IS 13252
Environment	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC/EN 60529 IP42, IEC/EN 62262 IK08
Network	NIST SP500-267

Cybersecurity

Edge security	**Software:** Signed firmware, brute force delay protection, digest authentication, password protection, AES-XTS-Plain64 256bit SD card encryption **Hardware:** Axis Edge Vault cybersecurity platform Secure element (CC EAL 6+), system-on-chip security (TEE), Axis device ID, secure keystore, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)
Network security	IEEE 802.1X (EAP-TLS), IEEE 802.1AR, HTTPS/HSTS, TLS v1.2/v1.3, Network Time Security (NTS), X.509 Certificate PKI, IP address filtering
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* AXIS OS Software Bill of Material (SBOM) To download documents, go to *axis.com/support/cybersecurity/resources*

	To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*
General	
Casing	IP42 ingress protection, IK08 impact-resistant, polycarbonate and aluminum casing with hard-coated dome Encapsulated electronics Color: white NCS S 1002-B For repainting instructions of casing and impact on warranty, contact your Axis partner.
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 2 Typical 2.7 W, max 4.4 W
Connectors	RJ45 10BASE-T/100BASE-TX PoE HDMI type D Audio: Audio and I/O connectivity via portcast technology
Storage	Support for microSD/microSDHC/microSDXC card Recording to network-attached storage (NAS) For SD card and recorder recommendations, see *axis.com*
Operating conditions	0 °C to 45 °C (32 °F to 113 °F) Humidity 10–85% RH (non-condensing)
Storage conditions	-30 °C to 65 °C (-22 °F to 149 °F) Humidity 5–95% RH (non-condensing)
Dimensions	Height: 71 mm (2.8 in) ø 120 mm (4.72 in)
Weight	348 g (0.77 lb)
Box content	Camera, installation guide, owner authentication key, virtual client license for H.264/H.265
Optional accessories	AXIS T8415 Wireless Installation Tool AXIS TM4201 Recessed Mount AXIS TM3207 Recessed Mount AXIS T94C01L Recessed Mount AXIS T94C01U Universal Mount AXIS T94C01M J-Box/Gang Box Plate AXIS M42 Casing A Black 4P AXIS M42 Smoked Dome A 4P AXIS T91A33 Lighting Track Mount AXIS T91A23 Tile Grid Ceiling Mount AXIS TM4101 Pendant Kit AXIS TM3101 Pendant Wall Mount AXIS Surveillance Cards For more accessories, go to *axis.com/products/axis-m4215-v#accessories*
System tools	AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator Available at *axis.com*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*
Part numbers	Available at *axis.com/products/axis-m4215-v#part-numbers*
Sustainability	
Substance control	PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709 RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Renewable carbon-based plastic content: 40.3% (recycled) Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*
Environmental responsibility	*axis.com/environmental-responsibility* Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

a. *Reduced frame rate in Motion JPEG*
b. *We recommend a maximum of 3 unique video streams per camera or channel, for optimized user experience, network bandwidth, and storage utilization. A unique video stream can be served to many video clients in the network using multicast or unicast transport method via built-in stream reuse functionality.*



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Revision	v.01	Revision date	2023-03-20
Paper size	A4	Release date	2023-03-20
Created by	MS	Scale	1:3

Detect, Observe, Recognize, Identify (DORI)

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	48.78 m (160.0 ft)	92.23 m (302.5 ft)
Observe	63 px/m (19 px/ft)	19.34 m (63.44 ft)	36.59 m (120.0 ft)
Recognize	125 px/m (38 px/ft)	9.72 m (31.9 ft)	18.43 m (60.45 ft)
Identify	250 px/m (76 px/ft)	4.81 m (15.8 ft)	9.19 m (30.1 ft)

The DORI values are calculated using pixel densities for different use cases as recommended by the EN-62676-4 standard. The calculations use the center of the image as the reference point and consider lens distortion. The possibility to recognize or identify a person or object depends on factors such as object motion, video compression, lighting conditions, and camera focus. Use margins when planning. The pixel density varies across the image, and the calculated values can differ from the distances in the real world.

Key features and technologies

AXIS Object Analytics

AXIS Object Analytics is a preinstalled, multifeatured video analytics that detects and classifies humans, vehicles, and types of vehicles. Thanks to AI-based algorithms and behavioral conditions, it analyzes the scene and their spatial behavior within – all tailored to your specific needs. Scalable and edge-based, it requires minimum effort to set up and supports various scenarios running simultaneously.

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It offers features to guarantee the device's identity and integrity and to protect your sensitive information from unauthorized access.

Establishing the root of trust starts at the device's boot process. In Axis devices, the hardware-based mechanism **secure boot** verifies the operating system (AXIS OS) that the device is booting from. AXIS OS, in turn, is cryptographically signed (**signed firmware**) during the build process. Secure boot and signed firmware tie into each other and ensure that the firmware has not been tampered with during the lifecycle of the device and that the device only boots from authorized firmware. This creates an unbroken chain of cryptographically validated software for the chain of trust that all secure operations depend on.

From a security aspect, the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc..) against malicious extraction in the event of a security breach. The secure keystore is provided through a Common Criteria and/or FIPS 140 certified hardware-based cryptographic computing module. Depending on security requirements, an Axis device can have either one or multiple such modules, like a TPM 2.0 (Trusted Platform Module) or a secure element, and/or a system-on-chip (SoC) embedded Trusted Execution Environment (TEE).

Signed video ensures that video evidence can be verified as untampered without proving the chain of custody of the video file. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream. This allows video to be traced back to the Axis camera from where it originated, so it's possible to verify that the footage has not been tampered with after it left the camera.

To read more about Axis Edge Vault, go to *axis.com/solutions/edge-vault*.

Lightfinder

The Axis Lightfinder technology delivers high-resolution, full-color video with a minimum of motion blur even in near darkness. Because it strips away noise, Lightfinder makes dark areas in a scene visible and captures details in very low light. Cameras with Lightfinder discern color in low light better than the human eye. In surveillance, color may be the critical factor to identify a person, an object, or a vehicle.

Zipstream

The Axis Zipstream technology preserves all the important forensic in the video stream while lowering bandwidth and storage requirements by an average of 50%. Zipstream also includes three intelligent algorithms, which ensure that relevant forensic information is identified, recorded, and sent in full resolution and frame rate.

For more information, see *axis.com/glossary*